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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
RAWLINGS, STEPHEN L	

ART UNIT	PAPER NUMBER
1643	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/653,680	DAI, KEN-SHWO	
	Examiner	Art Unit	
	Stephen L. Rawlings, Ph.D.	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 March 2004 and 08 June 2004*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-25* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed June 8, 2004, is acknowledged and has been entered.

2. The amendment filed March 18, 2004, is acknowledged and has been entered. Claims 1, 8, 10, 11, 13, and 24 have been amended.

3. Claims 1-25 are pending in the application and are currently subject to restriction.

Election/Restrictions

4. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I. Claim 1, insofar as the claim is drawn to a polypeptide or a fragment thereof, wherein said polypeptide comprises SEQ ID NO: 2, classified, for example, in class 530, subclass 350.

Group II. Claim 1, insofar as the claim is drawn to a polypeptide or a fragment thereof, wherein said polypeptide comprises SEQ ID NO: 4, classified, for example, in class 530, subclass 350.

Group III. Claim 1, insofar as the claim is drawn to a polypeptide or a fragment thereof, wherein said polypeptide comprises SEQ ID NO: 6, classified, for example, in class 530, subclass 350.

Group IV. Claims 2-8, insofar as the claims are drawn to a nucleic acid molecule or a fragment thereof, an expression vector comprising said nucleic acid molecule, a host cell transformed with said expression vector, and a method for producing said polypeptide or a fragment thereof, wherein said nucleic acid molecule comprises SEQ ID NO: 1, classified, for example, in class 536,

subclass 23.5, class 435, subclass 320.1, class 435, subclass 325, and class 435, subclass 69.1, respectively.

Group V. Claims 2-8, insofar as the claims are drawn to a nucleic acid molecule or a fragment thereof, an expression vector comprising said nucleic acid molecule, a host cell transformed with said expression vector, and a method for producing said polypeptide or a fragment thereof, wherein said nucleic acid molecule comprises SEQ ID NO: 3, classified, for example, in class 536, subclass 23.5, class 435, subclass 320.1, class 435, subclass 325, and class 435, subclass 69.1, respectively.

Group VI. Claims 2-8, insofar as the claims are drawn to a nucleic acid molecule or a fragment thereof, an expression vector comprising said nucleic acid molecule, a host cell transformed with said expression vector, and a method for producing said polypeptide or a fragment thereof, wherein said nucleic acid molecule comprises SEQ ID NO: 5, classified, for example, in class 536, subclass 23.5, class 435, subclass 320.1, class 435, subclass 325, and class 435, subclass 69.1, respectively.

Group VII. Claim 9, insofar as the claim is drawn to an antibody that binds a polypeptide or a fragment thereof, wherein said polypeptide comprises SEQ ID NO: 2, classified, for example, in class 530, subclass 387.9.

Group VIII. Claim 9, insofar as the claim is drawn to an antibody that binds a polypeptide or a fragment thereof, wherein said polypeptide comprises SEQ ID NO: 4, classified, for example, in class 530, subclass 387.9.

Group IX. Claim 9, insofar as the claim is drawn to an antibody that binds a polypeptide or a fragment thereof, wherein said polypeptide comprises SEQ ID NO: 6, classified, for example, in class 530, subclass 387.9.

Group X. Claims 10-14, 17, 20, and 23, insofar as the claims are to a method for diagnosing a disease, said method comprising detecting a nucleic acid molecule or a fragment thereof, wherein said nucleic acid molecule comprises SEQ ID NO: 1, classified, for example, in class 435, subclass 6.

Group XI. Claims 10-13, 15, 18, 21, and 23, insofar as the claims are to a method for diagnosing a disease, said method comprising detecting a nucleic acid molecule or a fragment thereof, wherein said nucleic acid molecule comprises SEQ ID NO: 3, classified, for example, in class 435, subclass 6.

Group XII. Claims 10-14, 16, 19, 22, and 23, insofar as the claims are to a method for diagnosing a disease, said method comprising detecting a nucleic acid molecule or a fragment thereof, wherein said nucleic acid molecule comprises SEQ ID NO: 5, classified, for example, in class 435, subclass 6.

Group XIII. Claims 10, 24, and 25, insofar as the claims are to a method for diagnosing a disease, said method comprising detecting as polypeptide or a fragment thereof, wherein said polypeptide comprises SEQ ID NO: 2, classified, for example, in class 435, subclass 7.1.

5. The inventions are distinct, each from the other because of the following reasons:

The inventions of Groups I-IX are products, whereas the inventions of Groups X-XIII are processes.

The inventions of Groups I-VI and the inventions of Groups X-XII are unrelated because the products of Groups I-VI are not specifically used or otherwise involved in the processes of Groups X-XII.

The inventions of Groups VII-IX and the inventions of Group XIII are related as products and processes of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed, namely the antibody can be used in a materially different process of using that product, such as the process of using the antibody to purify the protein to which the antibody binds by affinity chromatography.

The inventions of any of Groups VII-IX and the inventions of Group XIII have acquired a separate status in the art, as evidenced by their different classifications and/or art-recognized divergence in subject matter, and the search performed in examining claims drawn to a product is a different from the search performed in examining claims drawn to a process using that product. Apart from the searching patent databases using the patent classification of the claimed subject matter, a thorough search of the technical literature is particularly pertinent, and since such a search is performed by a series of key word queries of relevant databases, each search would be performed using a different set or series of key words. Therefore, the search and considerations necessary in examining the merit of claims directed to the inventions of any of Groups VII-IX would not suffice to provide adequate information regarding the merit of the claims directed to the inventions of Group XIII, and vice versa, since the searches are not the same, nor are they one coextensive in scope and nature. Because different searches would have to be performed to examine claims directed to the inventions of any one of Groups VII-IX and the inventions of Group XIII, an examination of both would constitute a serious burden.

Since the inventions of any of Groups VII-IX and the inventions of Group XIII have been shown to be patentably distinct, and because the examination of both inventions could not be made without serious burden, it is proper to restrict each from the other. See MPEP § 803.

The inventions of Groups I-IX are patentably distinct for the following reasons:

The inventions of Groups I-III are polypeptides or fragments thereof; in contrast, the inventions of Groups IV-VI are nucleic acid molecules or fragments thereof, expression vectors comprising such nucleic acid molecule, host cells transformed with such expression vectors, and methods for producing polypeptides or fragments thereof comprising culturing such host cells, whereas the inventions of Groups VII-IX are antibodies.

Although the inventions of Groups I-III are polypeptides or fragments thereof, each polypeptide comprises a distinct structure and/or function. For this reason, the search required necessary to consider claims directed to any one of the inventions of Groups I-III is not the same, nor is it coextensive with the search necessary to consider claims directed to any of the others. Consequently, the consideration of claims directed to each of the different inventions would require that a separate and distinct search be performed; and having to perform more than one search would be unduly burdensome. Since the inventions of Groups I-III are patentably distinct, each from the others, and because the examination of more than one could not be made without serious burden, it is proper to restrict one from the other. See MPEP § 803.

Although the inventions of Groups IV-VI are nucleic acid molecules, vectors, host cells, or method for producing polypeptides or fragments thereof, the nucleic acid molecules of the different inventions are structurally and functionally distinct, as each comprises a different polynucleotide sequence and encodes a different polypeptide comprising a distinct structure and/or function. For this reason, the search required necessary to consider claims directed to any one of the inventions of Groups IV-VI is not the same, nor is it coextensive with the search necessary to consider claims directed to any of the others. Consequently, the consideration of claims directed to each of the different inventions would require that a separate and distinct search be performed; and having to perform more than one search would be unduly burdensome. Since the inventions of Groups IV-VI are patentably distinct, each from the others, and because the examination of more than one could not be made without serious burden, it is proper to restrict one from the other. See MPEP § 803.

Although the inventions of Groups VII-IX are antibodies, the antibodies of the different inventions are structurally and functionally distinct, as each comprises a different antigen-binding domain that recognizes an antigenic determinant on a different polypeptide comprising a distinct structure and/or function. For this reason, the search required necessary to consider claims directed to any one of the inventions of Groups VII-IX is not the same, nor is it coextensive with the search necessary to consider claims directed to any of the others. Consequently, the consideration of claims directed to each of the different inventions would require that a separate and distinct search be performed; and having to perform more than one search would be unduly burdensome. Since the inventions of Groups VII-IX are patentably distinct, each from the others, and because the examination of more than one could not be made without serious burden, it is proper to restrict one from the other. See MPEP § 803.

Furthermore, although the nucleic acid molecules of the inventions of Groups IV-VI encode the polypeptides of the inventions of Groups I-III, respectively, they are nonetheless patentably distinct inventions since polypeptides and polynucleotides are chemically distinct products, since polypeptides are composed of polymers of amino acids, whereas polynucleotides are composed of polymers of nucleotides. Any relationship between a polynucleotide and a polypeptide is dependent upon the information provided by the nucleotide sequence of the polynucleotide, as it corresponds to an "open reading frame" encoding the amino acid sequence of the polypeptide. However, a polypeptide can be produced by means, other than the recombinant means by which a polynucleotide encoding a polypeptide might be used to produce the polypeptide, since a polypeptide can be produced (or isolated) by biochemical means, including, for example, affinity chromatography. In addition, while the polynucleotide might encode the polypeptide, generally, it can also encode another polypeptide using the information provided by an alternative open reading frame; and furthermore, since a polynucleotide can be used as a probe in hybridization-based analyses, the information provided by a polynucleotide can be used isolate different polynucleotides encoding polypeptides, which have amino acid sequences that differ from the amino acid sequence encoded by the disclosed polynucleotide. Consequently,

the disclosed relationship between a polynucleotide capable of encoding a polypeptide and the polypeptide is not exclusive, since either the claimed polynucleotide or the claimed polypeptide can also be related to other polynucleotides or polypeptides, which are materially and chemically different from the claimed inventions. Therefore, the inventions of Groups IV-VI and the inventions of Groups I-III, respectively, are patentably distinct products.

The inventions of Groups IV-VI and the inventions of Groups I-III have acquired a separate status in the art, as evidenced by their different classifications, and the search performed in examining claims drawn to a polynucleotide is a different from the search performed in examining claims drawn to a polypeptide. Apart from the searching patent databases using the patent classification of the claimed subject matter, a thorough search of the technical literature is particularly pertinent, and since such a search is performed by a series of key word queries of relevant databases, each search would be performed using a different set or series of key words. Therefore, the search and considerations necessary in examining the merit of claims directed to the inventions of any of Groups I-III would not suffice to provide adequate information regarding the merit of the claims directed to the inventions of any of Groups IV-VI, and vice versa, since the searches are not the same, nor are they one coextensive in scope and nature. Because different searches would have to be performed to examine the inventions of any of Groups I-III and the inventions of any of Groups IV-VI, an examination of both would constitute a serious burden. Moreover, because the disclosed relationship between the polynucleotide and the polypeptide encoded by the polynucleotide is not absolute or exclusive of other relationships with different polynucleotides or polypeptides, the search of either group will likely provide information that is relevant to one but not the other; and as such, searching one in addition to the other would be unduly burdensome.

Since the inventions of any of Groups I-III and the inventions of any of Groups IV-VI are patentably distinct from the other and because the examination of both could not be made without serious burden, it is proper to restrict one from the other. See MPEP § 803.

In addition, although the antibodies of the inventions of Groups VII-IX bind the polypeptides of the inventions of Groups I-III, respectively, they are nonetheless patentably distinct inventions. An antibody, such as an immunoglobulin G (IgG) molecule, typically comprises four polypeptides: two light chains and two heavy chains, each containing constant and variable regions, which interact with one another to form an antigen-binding domain comprised of amino acid residues in each chain. In contrast, claims polypeptides are disclosed as consisting of a single polypeptide chain; so the inventions of any of Groups I-III and the inventions of any of Groups VII-IX are structurally distinct from one another. Thus, any relationship between an antibody and a polypeptide to which the antibody binds is codependent upon the structural (i.e., antigenic) information provided by the polypeptide, which is recognized as the antigenic determinant to which the antibody binds, and the selective binding nature of the antigen-binding domain of the antibody. However, a polypeptide comprises multiple antigenic determinants and can thus elicit the production of multiple different antibodies, which recognize and bind structurally distinct portions (i.e., epitopes) of the polypeptide. Furthermore, an antibody is capable of recognizing and binding antigenic determinants that are shared by polypeptides, which are otherwise structurally and/or functionally distinct from the claimed polypeptide to which it binds (e.g., a human protein's mouse homolog, or a different member of a functionally related family of proteins). Consequently, the disclosed relationship between an antibody that binds a polypeptide and the polypeptide is not exclusive, since either the claimed antibody or the claimed polypeptide can also be related to other polypeptides or antibodies, respectively, which are materially and chemically different from the claimed inventions. Therefore, the inventions of any of Groups I-III and the inventions of any of Groups VII-IX are patentably distinct products.

Searching both the inventions of any of Groups I-III and the inventions of any of Groups VII-IX would be unduly burdensome, because the inventions have acquired a separate status in the arts, as evidenced by their separate classifications, and moreover because the necessary searches are not the same, nor are they coextensive in nature and scope with one another. A search of relevant sequence databases using the entire

amino acid sequence of the polypeptide as query is necessary for the determination of the novelty and unobviousness of the polypeptide. However, such a search is not necessary, or sufficient to identify antibodies that bind the polypeptide, since antibodies that bind an epitope of the polypeptide may be known, even if the polypeptide is not (e.g., a anti-phosphotyrosine antibody binds a phosphotyrosine epitope, which is shared by numerous different proteins, and which would bind a novel tyrosine phosphorylated polypeptide). Accordingly, a thorough search of the technical literature is particularly pertinent, and since such a search is performed by a series of key word queries of relevant databases, each search would be performed using a different set or series of key words. Therefore, having to search both the inventions of any of Groups I-III and the inventions of any of Groups VII-IX would constitute a serious burden.

Since the inventions of any of Groups I-III and the inventions of any of Groups VII-IX are patentably distinct and because the examination of both could not be made without serious burden, it is proper to restrict one from the other. See MPEP § 803.

Then, regarding the reasons that the inventions of Groups IV-VI and the inventions of Groups VII-IX are patentably distinct, polynucleotides are composed of polymers of nucleotides, whereas antibodies are composed of polymers of amino acids. Any relationship between a polynucleotide and a polypeptide is dependent upon the information provided by the nucleotide sequence of the polynucleotide, as it corresponds to an "open reading frame" encoding the amino acid sequence of the polypeptide. However, the claimed polynucleotide does not encode a polypeptide chain of the claimed antibody; and the claimed antibody cannot be encoded by the claimed polynucleotide. Therefore, the inventions of any of Groups IV-VI and the inventions of any of Groups VII-IX are patentably distinct products.

Searching both the inventions of any of Groups IV-VI and the inventions of any of Groups VII-IX would be unduly burdensome, because the inventions have acquired a separate status in the arts, as evidenced by their separate classifications, and moreover because the necessary searches are not the same, nor are they coextensive in nature and scope with one another. Therefore, having to search both the inventions of any of

Groups VI-VI and the inventions of any of Groups VII-IX would constitute a serious burden.

Since the inventions of any of IV-VI and the inventions of any of Groups VII-IX are patentably distinct from the other and because the examination of both could not be made without serious burden, it is proper to restrict one from the other. See MPEP § 803.

The inventions of Groups X-XIII are patentably distinct, each from the others, for the following reasons:

Although each is a method for diagnosing a disease, each is a materially different process comprising different process steps. For example, the inventions of Groups X-XII comprise detecting the presence of different nucleic acid molecules and therefore necessarily involve the use of different probes or primers that selectively hybridize to the different nucleic acids molecules that are detected. In contrast to the inventions of Groups X-XII, the inventions of Group XIII involve the detection of a protein. As such, each of the different inventions necessarily measures a different endpoint and involves the establishment of a different correlation between the measured endpoints and the presence of disease in a mammal.

Because the inventions of Groups X-XIII are distinct, each from the others, for these reasons, the search required to examine claims directed to any one of these inventions is not the same, nor is it coextensive with the search required to examine claims directed to any other. Furthermore, the inventions of Groups X-XII and the inventions of Group XIII have acquired a separate status in the art, as evidenced by their different classifications and/or art-recognized divergence in subject matter. Because different searches would have to be performed to examine claims directed to the inventions of any of Groups X-XIII, an examination of more than one would constitute a serious burden.

Since the inventions of Groups X-XIII have been shown to be patentably distinct, each from the others, and because the examination of more than one could not be

made without serious burden, it is proper to restrict each from the other. See MPEP § 803.

6. Because these inventions are distinct for the reasons given above and also because the search required for any one group is not required for any other group and/or the inventions have acquired a separate status in the art as shown by their different classification or their recognized divergent subject matter, searching more than one invention encompassed by the claim would constitute a serious burden; therefore, restriction for examination purposes as indicated is proper.

7. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. § 103(a) of the other invention.

8. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or**

otherwise include all the limitations of the patentable product will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai, In re Brouwer* and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen L. Rawlings, Ph.D., whose telephone number is (571) 272-0836. The examiner can normally be reached on Monday-Friday, 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms, Ph.D. can be reached on (571) 272-0832. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen L. Rawlings, Ph.D.
Examiner
Art Unit 1643

slr
April 18, 2006